

AMENDMENTS TO THE CLAIMS

1. – 94. (Canceled)

95. (Currently Amended) A transdermal sampling system, comprising:

a microfluidic assembly for retrieving and transferring at least one analyte obtained transdermally from the skin of a subject;

at least one detector system for identifying and quantifying said at least one analyte; and

at least one logic module for (i) receiving and storing input data from said at least one detector, (ii) relating the input data to other data obtained from the subject relating to the condition of the subject, (iii) displaying output information indicative of health and clinical state of the subject as determined from the relating of the input data to the other data, (iv) transmitting the output information to another system, and (v) controlling the operation of said at least one sampler and at least one detector, and

wherein at least one surface of the microfluidic assembly is modified in a manner to enhance sampling function;

wherein the modification of the at least one surface of the microfluidic assembly attaches to the at least one surface of the microfluidic assembly at least one specific-binding molecule which specifically binds the at least one analyte;

~~The transdermal sampling system according to claim 94,~~ wherein the at least one specific-binding molecule is bound with at least one fluorescently labeled analyte,

wherein the at least one analyte obtained transdermally from the skin of a subject displaces the bound at least one fluorescently labeled analyte, and

wherein measurement of the amount of fluorescence displaced from the at least one specific-binding molecule correlates with the amount of the at least one analyte obtained transdermally from the skin of a subject.

96. (Previously Presented) The transdermal sampling system according to claim 95, wherein the at least one specific-binding molecule is an antibody which specifically binds the at least one analyte.

97. (Previously Presented) The transdermal sampling system according to claim 95, wherein the at least one specific-binding molecule is an antibody fragment which specifically binds the at least one analyte.

98. (Previously Presented) The transdermal sampling system according to claim 95, wherein the at least one specific-binding molecule is an artificial antibody which specifically binds the at least one analyte.

99. (Previously Presented) The transdermal sampling system according to claim 95, wherein the at least one specific-binding molecule is an artificial antibody which specifically binds the at least one analyte.

100. (Previously Presented) The transdermal sampling system according to claim 95, wherein the at least one specific-binding molecule is a lectin which specifically binds the at least one analyte.

101. (Previously Presented) The transdermal sampling system according to claim 95, wherein the at least one specific-binding molecule is a hybridizable nucleic acid which specifically binds the at least one analyte.

102. (Previously Presented) The transdermal sampling system according to claim 95, wherein the at least one specific-binding molecule is a nucleic acid-binding protein which specifically binds the at least one analyte.

103. (Previously Presented) The transdermal sampling system according to claim 95, wherein the at least one specific-binding molecule is a protein-binding protein which specifically binds the at least one analyte.

104. (Previously Presented) The transdermal sampling system according to claim 95, wherein the at least one specific-binding molecule is a cofactor-binding protein which specifically binds the at least one analyte.

105. – 115. (Canceled)